

**REMARKS****Summary of the Office Action**

Claims 1, 2, and 5-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Korenowski (US 4,140,772).

Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski.

Claims 8-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Applicants' Admitted Prior Art.

Claims 8, 10, and 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Hong et al. (US 6,130,443).

Claims 9 and 11-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Hong et al. and Chae et al. (US 6,515,726).

Claims 6, 7, 16, and 17 stand objected to for minor informalities.

**Summary of the Response to the Office Action**

Applicants have amended claim 1, 7, 8, 12, 16, and 17 to further define the invention and canceled claims 5, 6, and 11. Accordingly, claims 1-4, 7-10, and 12-17 are pending.

**Claim Objections**

Claims 6, 7, 16, and 17 stand objected to for minor informalities. Accordingly, Applicants have amended claims 7, 16, and 17 in accordance with the Examiner's suggestions. Thus, Applicants respectfully request that the objections be withdrawn.

**All Claims Define Allowable Subject Matter**

Claims 1, 2, and 5-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Korenowski (US 4,140,772), claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski, claims 8-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Applicants' Admitted Prior Art, claims 8, 10, and 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Hong et al. (US 6,130,443), and claims 9 and 11-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korenowski in view of Hong et al. and Chae et al. (US 6,515,726).

Applicants respectfully traverse these rejections as being based upon combinations of Applicants' Related Art and prior art references that neither teach nor suggest the novel combination of features recited in amended independent claims 1 and 8, and hence dependent claims 2-4, 7, 9, 10, and 12-17.

With regard to independent claim 1, as amended, Korenowski fails to teach or suggest an etchant having a mixed solution including a "neutral salt." In contrast to Applicants' claimed invention, Korenowski teaches use of a saccharin stabilizer added to an aqueous solution including an acid and hydrogen peroxide. Accordingly, Applicants respectfully submit that Korenowski neither teach nor suggest Applicants' claimed feature of "a mixed solution including a neutral salt," as recited by amended independent claim 1, and hence, dependent claims 2-4 and 7.

Independent claim 8 recites a method of forming an array substrate including a plurality of steps. The Office Action admits that "Korenowski does not particular about the structure that being subjected to etching in its process." Thus, the Office Action relies upon Applicants'

Related Art FIGs. 1-3 and Hong et al. for both teaching a “conventional” method of forming an array substrate. As a result, the Office Action alleges that it would have been obvious to one having ordinary skill in the art to “use the etchant of Korenowski in the method of forming an array substrate for use in a TFT-LCD device in order to provide their art recognized advantages and produce an expected result.” Applicants respectfully disagree.

Initially, Applicants respectfully note that Related Art FIGs. 1-3, and their respective discussions on pages 4-6 of the instant application, do not teach or suggest steps of forming an array substrate, as recited by independent claim 8. Accordingly, Applicants respectfully assert that Related Art FIGs. 1-3 do not provide any motivation to modify the teachings of Korenowski.

MPEP §2143.01 instructs that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).” Moreover, MPEP §2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974).” Accordingly, because Applicants’ Related Art FIGs. 1-3 and the applied art do not teach or suggest **all the claim limitations**, and the applied art does not provide recognition between the claimed invention and the Office Action’s alleged art recognized equivalence motivation, Applicants respectfully assert that the Office Action has not established a *prima facie* case of obviousness.

With regard to Hong et al., Applicants respectfully note that the Office Action does not rely upon Hong et al. to teach these features. In any event, Hong et al. teaches forming a triple-layered structure including a MoW alloy layer, an Al or Al alloy layer, and a MoW alloy layer.

Accordingly, Applicants respectfully submit that Hong et al. fails to teach or suggest at least the steps of “forming a third copper metal layer on the second metal layer” and “simultaneously patterning the second metal layer and the third copper metal layer,” as recited by amended independent claim 8, and hence dependent claims 9, 10, and 12-17.

With regard to Chae et al., the present application was filed on December 17, 2001, and therefore governed by 35 U.S.C. § 103(c) as revised on November 29, 1999. Chae et al. is at best available as prior art under 35 U.S.C. § 102(e) since it was published after the filing date of the present application. The subject matter of the Chae et al. and the present invention were, at the time the invention was made, commonly owned by LG.Philips LCD Co., Ltd. of Seoul, Korea. Therefore, the disclosure of Chae et al. can not preclude patentability of the present invention under 35 U.S.C. § 103(c). In addition, Applicants respectfully submit that Chae et al. is not even available as prior art under 35 U.S.C. § 102(e) because Chae et al. lists identical inventors. (Here it is noted that the names “Gee” and “Ki” are interchangeable upon translation from Korean into English.) Thus, the rejections relying upon Chae et al. are improper.

For the above reasons, Applicant respectfully asserts that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because Applicants’ Related Art FIGs. 1-3, Korenowski, Hong et al. and/or Chae et al., whether taken individually or in combination, neither teach nor suggest the novel combination of features clearly recited in amended independent claims 1 and 8, and hence dependent claims 2-4, 7, 9, 10, and 12-17.

**Conclusion**

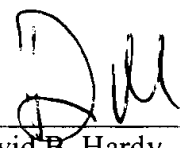
In view of the foregoing, Applicant respectfully requests reconsideration and timely allowance of the pending claims. Should the Examiner believe that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

**MORGAN, LEWIS & BOCKIUS LLP**

By: \_\_\_\_\_

  
David B. Hardy  
Reg. No. 47,362

Dated: July 15, 2003

**Customer Number: 009629**

**MORGAN, LEWIS & BOCKIUS LLP**

1111 Pennsylvania Avenue, N.W.

Washington, DC 20004

202-739-3000